ABSTRACT

The present invention is a method for synthesizing macrosphelides represented by the following formula, and relates to the following method. The hydroxyl group of methyl 3-hydroxybutyrate is protected and reduced to alcohol. The alcohol is then oxidized to give 3-(tert-butyldimethylsilyloxy) butylaldehyde, and this aldehyde is then reacted with tert-butyl diethylphosphonoacetate to give an olefin, and then deprotected. Next, dehydrative condensation with diethylphosponoacetic acid are performed to give tert-butyl 5-[2-(diethylphosphonoyl) acetoxy] hex-2-enoate, and this compound is reacted with 3-(tert-butyldimethylsilyloxy) butylaldehyde to form a diester. Following this, deprotection is performed to give an alcohol, and dehydrative condensation of the alcohol with 3-(tert-butyldimethylsilyloxy) butyric acid gives a triester. A hydroxycarboxylic acid is yielded by deprotection, and then the hydroxycarboxylic acid is converted into a macrolactone.